



Water-Data Report 2011

01411500 MAURICE RIVER AT NORMA, NJ

MAURICE RIVER BASIN

LOCATION.--Lat 39°29'44", long 75°04'37" referenced to North American Datum of 1983, Pittsgrove Township, Salem County, NJ, Hydrologic Unit 02040206, on right bank just upstream from bridge on Almond Road (County Route 540), 0.6 mi east of Norma, 0.8 mi downstream from Blackwater Branch, and 2.9 mi west of Vineland.

DRAINAGE AREA.--112 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--July 1932 to current year. Monthly discharge only for December 1933, published in WSP 1302.

REVISED RECORDS.--WSP 1382: 1933. WDR NJ-79-1: 1967(P). WDR NJ-82-2: Drainage area. WDR US-2007: 2000, 2003.

GAGE.--Water-stage recorder and crest-stage gage. Concrete control since Dec 27, 1937. Datum of gage is 46.94 ft above NGVD of 1929.

REMARKS.--Records fair. Occasional regulation by lakes and ponds upstream. Several measurements of water temperature were made during the year.
Satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 380 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 11	1915	413	3.49
Apr 19	1245	529	3.70
Aug 16	1215	2,030	6.33
Aug 29	1600	*3,960	*7.72
Sep 10	0700	875	4.62

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01411500 MAURICE RIVER AT NORMA, NJ—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	156	105	117	108	150	257	203	233	126	236	94	819
2	203	99	150	121	175	238	209	224	121	191	121	603
3	265	97	147	133	204	216	202	214	113	152	125	487
4	258	128	140	133	207	197	196	214	112	134	134	436
5	220	159	132	130	204	183	192	232	110	121	127	409
6	194	157	123	125	204	193	194	229	108	111	120	393
7	169	152	114	120	201	318	190	220	106	105	113	426
8	144	139	109	117	202	352	191	206	105	137	106	555
9	124	129	112	115	199	330	212	193	102	271	123	749
10	113	121	105	110	194	320	217	181	127	334	184	851
11	105	115	102	107	184	395	217	171	122	343	186	707
12	99	112	125	108	174	409	214	167	157	326	167	585
13	96	109	166	105	168	382	230	162	181	260	141	517
14	95	108	163	109	162	349	233	161	211	203	261	466
15	108	108	141	103	161	318	225	172	218	156	1,180	424
16	106	116	150	104	160	312	220	178	182	133	1,940	390
17	100	129	132	102	160	312	329	186	149	120	1,350	356
18	94	133	125	134	160	294	419	197	137	113	797	324
19	106	120	120	167	159	276	517	203	126	116	535	311
20	111	111	115	176	154	259	473	213	116	157	423	302
21	108	106	112	181	149	242	387	216	110	159	359	301
22	102	106	109	173	151	231	320	220	106	158	329	288
23	95	106	108	166	150	223	278	215	110	141	292	297
24	90	104	105	150	147	247	263	202	107	125	262	348
25	86	99	103	138	179	266	277	187	115	137	252	357
26	86	97	105	141	219	262	263	173	111	136	308	357
27	94	97	111	173	235	241	245	160	105	122	342	335
28	119	95	110	176	242	219	231	151	143	108	1,710	320
29	125	93	109	169	---	208	228	144	229	106	3,480	316
30	121	92	107	162	---	199	231	137	257	103	2,620	346
31	113	---	106	156	---	197	---	132	---	97	1,400	---
Total	4,005	3,442	3,773	4,212	5,054	8,445	7,806	5,893	4,122	5,111	19,581	13,375
Mean	129	115	122	136	180	272	260	190	137	165	632	446
Max	265	159	166	181	242	409	517	233	257	343	3,480	851
Min	86	92	102	102	147	183	190	132	102	97	94	288
Cfsm	1.15	1.02	1.09	1.21	1.61	2.43	2.32	1.70	1.23	1.47	5.64	3.98
In.	1.33	1.14	1.25	1.40	1.68	2.80	2.59	1.96	1.37	1.70	6.50	4.44

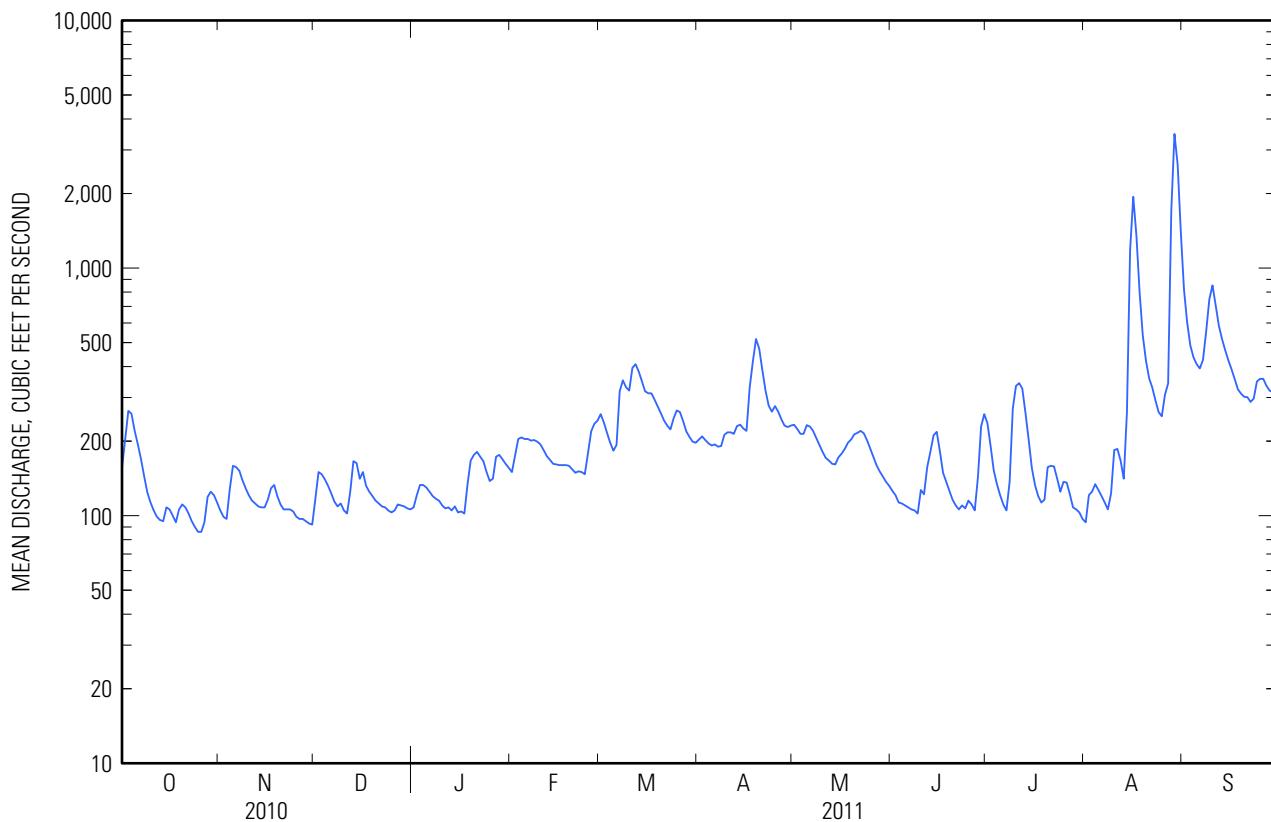
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2011, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	112	139	170	190	200	231	229	188	146	122	127	122
Max	266	330	403	380	418	523	437	387	325	333	632	591
(WY)	(1990)	(1973)	(2010)	(1936)	(1939)	(2010)	(1984)	(1958)	(2003)	(1975)	(2011)	(1940)
Min	48.6	46.7	57.1	64.7	69.4	89.9	90.9	79.5	57.7	35.6	32.1	40.6
(WY)	(1966)	(1966)	(1966)	(1966)	(2002)	(2002)	(1966)	(1977)	(1966)	(1966)	(2002)	(1965)

01411500 MAURICE RIVER AT NORMA, NJ—Continued**SUMMARY STATISTICS**

	Calendar Year 2010	Water Year 2011		Water Years 1933 - 2011	
Annual total	78,096		84,819		
Annual mean	214		232		164
Highest annual mean				253	1973
Lowest annual mean				67.4	1966
Highest daily mean	990	Mar 15	3,480	Aug 29	5,260 Sep 2, 1940
Lowest daily mean	53	Sep 11	86	Oct 25, 26	20 Aug 16, 2002
Annual seven-day minimum	56	Sep 6	94	Oct 21	20 Aug 16, 2002
Maximum peak flow			3,960	Aug 29	^a 7,360 Sep 2, 1940
Maximum peak stage			7.72	Aug 29	8.72 Sep 2, 1940
Instantaneous low flow			75	Jan 13	20 Aug 15, 2002
Annual runoff (cfsm)	1.91		2.07		1.47
Annual runoff (inches)	25.94		28.17		19.95
10 percent exceeds	409		356		281
50 percent exceeds	149		162		143
90 percent exceeds	79		105		67

^a From rating curve extended above 3,000 ft³/s by logarithmic plotting, peak was highest since at least 1867, when Union Lake Dam was built in Millville.



01411500 MAURICE RIVER AT NORMA, NJ—Continued**WATER-QUALITY RECORDS**

PERIOD OF RECORD.--Water years 1953, 1962-63, 1965-97, 1999 to current year.

PERIOD OF DAILY RECORD.--

DISSOLVED OXYGEN: August and September 2007. DISSOLVED OXYGEN PERCENT OF SATURATION: August and September 2007. PH: November 1992 to April 1994, August and September 2007. SPECIFIC CONDUCTANCE: January 1980 to November 1986, November 1992 to September 1994, August and September 2007. WATER TEMPERATURE: January 1980 to November 1986, November 1992 to September 1994, August and September 2007.

REMARKS.--Cooperative Network Site Descriptor: Watershed Integrator, NJ Department of Environmental Protection Watershed Management Area 17.

COOPERATION.--Physical measurements and samples for laboratory analyses were provided by personnel of the NJ Department of Environmental Protection. Determination of concentrations of ammonia in filtered water was performed by the NJ Department of Health and Senior Services, Environmental and Chemical Laboratory (DHSS-ECL) except during the period May 12 through August 25, 2011 when the determination was performed by the National Water-Quality Laboratory. Determination of concentrations of suspended solids in unfiltered water was performed by the DHSS-ECL except during the period June 17 through August 25, 2011 when samples could not be accepted.

**WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**

Part 1 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; cm, centimeter; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; <, less than]

Date	Sample start time	Barometric pressure, mm Hg (00025)	Temper-ature, air, °C (00020)	Absorbance, UV, organic constituents, UV, 254 nm, 1 cm path length, water, filtered, units		Discharge, filtered, units per centimeter (61726)	Dissolved oxygen, water, instantaneous, ft ³ /s (00061)	Dissolved oxygen, water, unfiltered, mg/L (00300)	% saturation (00301)	pH, water, unfiltered, field, standard units (00400)
				cm path length, water, filtered, units	path length, water, filtered, units					
11-03-2010	0900	766	1.0	.316	.251	97	8.9	77	6.3	
02-15-2011	0900	767	-.5	.219	.169	160	10.1	80	6.5	
05-18-2011	0900	758	18.5	.557	.440	197	7.1	76	6.3	
09-07-2011	1100	760	23.1	1.10	.865	428	7.9	94	6.6	

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WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

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[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; cm, centimeter; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; <, less than]

Date	Sample start time	Turbidity, water, unfiltered, broad band light source				Dissolved				Suspended	
		Specific conductance, water, unfiltered, µS/cm at 25 °C (00095)	Temperature, water, °C (00010)	Including 90 +/- 30 degrees, ratiometric correction, NTRU (63676)	Dissolved solids at multiple angles (400-680 nm), detectors at 180 °C, water, dried at filtered, mg/L (70300)	Dissolved solids, water, filtered, sum of constituents, mg/L (70301)	Hardness, water, mg/L as CaCO ₃ (00900)	Solids, water, unfiltered, mg/L (00530)	Calcium, water, filtered, mg/L (00915)		
11-03-2010	0900	116	9.1	2.1	78	66	24.9	2	5.19		
02-15-2011	0900	143	5.4	4.0	87	79	25.8	5	5.57		
05-18-2011	0900	117	18.3	3.2	69	63	22.4	2	4.87		
09-07-2011	1100	99	22.7	2.9	100	54	20.2	2	4.38		

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Part 3 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; cm, centimeter; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; <, less than]

Date	Sample start time	ANC, water, unfiltered, fixed endpoint (inorganic)				Carbon				Inorganic carbon, suspended sediment, total, mg/L (00688)	Silica, water, filtered, mg/L as SiO ₂ (00955)
		Magnesium, water, filtered, mg/L (00925)	Potassium, water, filtered, mg/L (00935)	Sodium, water, filtered, mg/L (00930)	Laboratory titration, mg/L as CaCO ₃ (90410)	plus organic, suspended sediment, total, mg/L (00694)	Chloride, water, filtered, mg/L (00940)	Fluoride, water, filtered, mg/L (00950)			
11-03-2010	0900	2.91	2.26	9.18	9.5	.45	17.4	.06	<.03	7.98	
02-15-2011	0900	2.88	2.02	14.3	7.7	1.17	24.5	.05	<.03	6.97	
05-18-2011	0900	2.49	2.26	9.89	12.2	1.12	19.0	<.04	<.03	4.94	
09-07-2011	1100	2.24	2.59	8.84	6.27	1.00	17.0	<.04	<.03	7.21	

01411500 MAURICE RIVER AT NORMA, NJ—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Part 4 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; cm, centimeter; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; <, less than]

Date	Sample start time	Ammonia plus organic nitrogen, water, filtered.		Nitrate plus nitrite, water, filtered.		Particulate nitrogen, suspended in water, filtered.	Phosphorus, water, filtered.	Phosphorus, water, unfiltered.	Total nitrogen, water, filtered.	Total nitrogen, water, unfiltered.
		Sulfate, water, filtered,	mg/L as N (00623)	Ammonia, water, filtered,	mg/L as N (00608)					
11-03-2010	0900	8.61	.42	.021	1.58	.042	.009	.013	2.0	2.0
02-15-2011	0900	9.80	.34	.026	1.90	.115	.007	.019	2.2	2.4
05-18-2011	0900	6.96	.65	.044	1.17	.092	.016	.030	1.8	1.9
09-07-2011	1100	5.17	.69	.018	.61	.091	.026	.050	1.3	1.4

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER
2011

Part 5 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; cm, centimeter; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; <, less than]

Date	Sample start time	Organic carbon, suspended sediment, total, mg/L	
		(00689)	mg/L (00681)
11-03-2010	0900	.45	6.22
02-15-2011	0900	1.17	4.62
05-18-2011	0900	1.12	9.35
09-07-2011	1100	1.00	18.9